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KOOTENAI NATIONAL FOREST
INSECT SURVEY
1940

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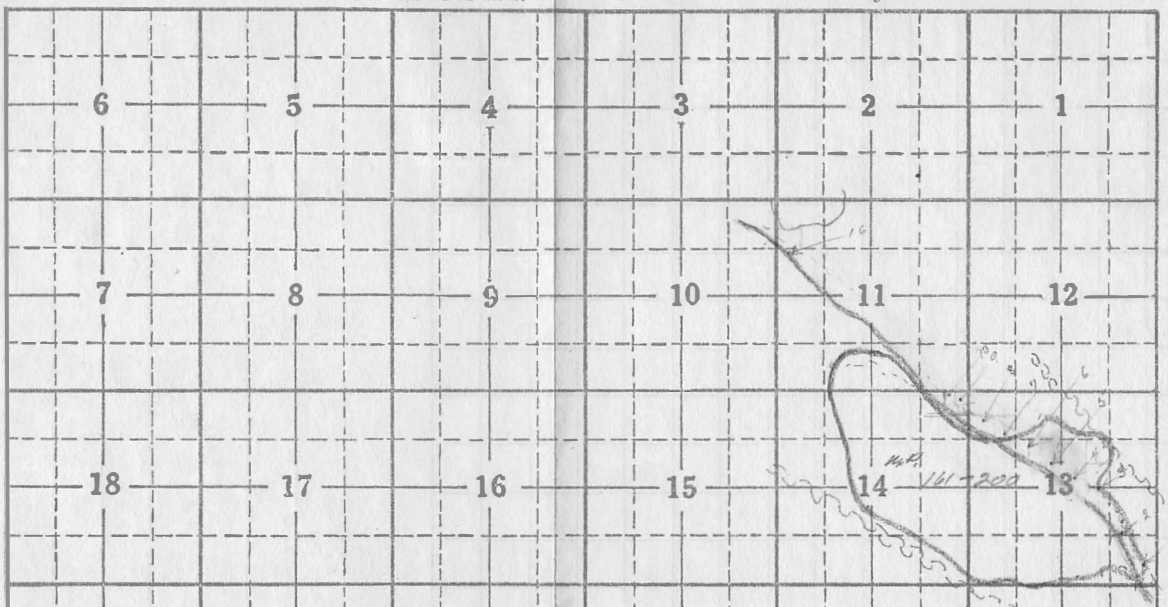

KOOTENAI NATIONAL FOREST
INSECT SURVEY
1940

by
Tom T. Terrell

During the season of 1938 the white pine stands of the Kootenai National Forest were surveyed by the Bureau of Entomology and Plant Quarantine to determine the extent of the damage being done by the mountain pine beetle. Again in 1939 four of the more heavily infested unit areas were again surveyed as a check against any possible rapid increase in the infestation. The present survey of 1940 is more in the order of a general survey of all of the stands to determine the status of the mountain pine beetle infestation in the white pine areas and to determine the status of infestation in some of the more important spruce stands by the Engelmann spruce beetle.

The 1940 survey started October 6 and was completed October 24, using a five-man crew for the first two weeks and an eight-man crew during the last week.

The tabulated results of the 1940 survey and the data secured in 1938 and in 1939 are given in the following table:

TABLE I

KOOTENAI NATIONAL FOREST
1940
INSECT SURVEY DATA

Unit	Acres	Infested trees per acre: 1938	Check 1939	1940	Total infested trees 1940
Pete Creek	2,880	.041		.06	173
Spread Creek	1,280	.0		.05	64
N. Meadow Cr.	800	.28		.09	72
S. Meadow Cr.	600	.07		.29	174
Star Creek	2,400	.716	.122	Logged	
Ruby Creek	640	.065		.22	141
N. Callahan	1,720	.114		.0	
S. Callahan	2,000	.0		.0	
N. Fk. Keeler	1,840	.218	.176	.016	29
Lower Keeler	500	.933	.303	.06	30
Upper Keeler	4,300	.028		.0	
Benning Creek	1,720	.421	.236	.39	670
Spar Lake	4,960	.149		.0	
Madge Creek	225	1.68		Logged	
Camp Creek	225	.45		Logged	
W. Fk. Quartz Creek	1,400	.111		.0	
Turner	800	.0		Logged	
Seventeen Mile	1,000	.021		.0	
Bristow Creek	1,120	.058		.0	
N. Fk. Big Cr.	640	.111		.08	51
Roberts Fork	1,040	No survey		.0	
Bear Creek	2,240	.098		.11	246
Ramsey Creek	2,560	.036		.034	87

ADDITIONAL AREAS IN 1940 SURVEY

Unit	Acres	Infested trees per acre 1940	Total infested trees
Cool Creek	1,600	0	
Cyclone-Crawford	1,280	0	
Pine Creek	640	0	
O'Brien Creek	1,400	0	
Goat Creek	640	.034	22

From the foregoing table it will be seen that five additional white pine areas were surveyed in 1940. These areas were surveyed because old records show that they were at one time surveyed for insect loss by the personnel of the Kootenai forest and that they at one time contained infested timber. The survey of these areas was as much in the nature of an investigation to determine the status of the white pine type as to determine the present insect loss. Without exception the five areas were found to either have been logged or did not have a white pine stand of any importance. It is therefore recommended that they be dropped from future survey plans.

In addition to the white pine stands surveyed, sample plots were examined in three areas stocked with Engelmann spruce.

During the years of 1936 and 1937 it is very evident that a severe infestation of the Engelmann spruce beetle was active in practically all of the spruce timber on the forest. Such an infestation was reported on the Pinkham Creek drainage and has been examined and reported upon several times since. However, standing insect-killed snags indicate that the epidemic was widespread during the same period.

The sample plots examined in the three spruce areas listed below were taken to prevent any reinfestation from developing unnoticed.

TABLE II

SPRUCE STANDS

Unit	Acres	Infested trees per acre 1940	Total infested trees 1940
Spread Creek	960	0	
Pinkham Creek	800	.05	40
Pheasant Creek	1,200	.11	132
	2,960		

The data given in table II show that while there is no serious infestation in these spruce stands at present, there is a latent or endemic condtion. Because insect epidemics in Engelmann spruce develop very quickly it is advisable for forest personnel to watch well-stocked spruce stands closely and to report any evidence of current insect activity.

In the following pages the unit areas and the data secured on each will be given as well as a brief explanation of the conditions of the stand.

WHITE PINE STANDS

Pete Creek Unit — Acres -- 2,880

Infested trees per acre		.06
Percent of stand killed		.36
Infested trees on unit	173	

Although only a normal infestation seems to be present in the white pine stands of Pete Creek drainage at this time, there was undoubtedly an abnormal infestation in 1939.

The Engelmann spruce has suffered to a serious extent in the past from an infestation of what may have been the Engelmann spruce beetle or a serious defoliation. There is no evidence of current kill and because of the conditions of the bark on the old trees it is hard to place the cause of the destruction, which is estimated to be some 10 percent of the stand.

Local reports from forest workers indicate a widespread infestation of hemlock looper or similar insect swept through a large part of the forest in 1938 and 1939.

Spread Creek Unit — Acres -- 1,280

Infested trees per acre		.05
Percent of stand killed		.2
Infested trees on unit	64	

The mountain pine beetle infestation in the Spread Creek unit seems normal except for a very few infested trees in a 1940 burned area. Logging is now in progress in the burned area and will soon remove all of the damaged trees.

Evidence of defoliation on western larch was seen in several instances along Spread Creek. The needles were shedding at the time of the examination, which made it difficult to determine the agent responsible, but it is believed to have been a species of larch sawfly.

N. Meadow Creek Unit — Acres -- 800

Infested trees per acre		.09
Percent of stand killed		.3
Infested trees on unit	72	

There is considerably less insect infestation in the north Meadow Creek unit now than was recorded during the survey of 1938.

However, a group of 5 infested trees was found which is not recorded. Evidently there is a possibility that a future increase is entirely possible.

Further checks should be made in the area next year.

S. Meadow Creek Unit — Acres -- 600

Infested trees per acre	.29
Percent of stand killed	2.0
Infested trees on unit	174

It seems evident that an incomplete logging operation has taken place in the white pine stands of South Meadow Creek. One area of about 250 acres in section 21 has scattered insect-killed trees throughout the area, which seems to be about the same as in 1939 when compared to the red tops present.

A somewhat isolated area of white pine to the south of the south fork in sections 22 and 27, which contains about 350 acres, is also infested to more than a normal extent. One group of 5 infested trees was recorded on a sample plot, which while tending to inflate the data secured to some extent also indicates that an abnormal infestation is present. It would be well to survey this area again in 1941.

Ruby Creek Unit — Acres -- 640

Infested trees per acre	.22
Percent of stand killed	1.3
Infested trees on unit	141

All but the Gordon Creek drainage of the Ruby Creek unit has been logged since the last insect survey which was made in 1938. Logging operations are now in progress in Gordon Creek and probably

will finish the area in 1941. Most of the timber in this area is of private ownership and will no doubt be clean cut.

N. Callahan Creek — Acres -- 1,720

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No infested trees were found in this sparsely timbered drainage. The white pine stands within this drainage range from very young timber in the upper end of the drainage to overmature in the Smith Creek tributary. Much of the area has been burned over and is very poorly stocked. It is recommended that it be dropped from future survey plans.

S. Callahan Creek Unit — Acres -- 2,000

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No infestation was recorded on the sample plots examined in this area. The area was logged a number of years ago and only a light stocking of seed trees remain.

North Keeler Creek Unit — Acres -- 1,840

Infested trees per acre		.016
Percent of stand killed		.05
Infested trees on unit	29	

Although but one infested tree was recorded on 610 sample plots examined in this unit, a few scattered infested trees were seen off the plots. However, it is felt that the infestation is not other than normal at this time. Control measures instituted in the area in 1939

were no doubt instrumental in reducing this infestation from .218 in 1938 to .176 in 1939. A further reduction which occurred during the past season is also believed to have been due to the 1938 control project. The 1939 infestation of .176 is thought to have been somewhat of a false figure because it did not fully represent the insect population. Most of the infested trees recorded in the 1939 check survey were lightly attacked (usually one-sided) which occurred in the vicinity of control operations, in weakened trees. Because these trees were rather numerous a figure of .176 infested tree per acre was obtained. However, when the brood from these lightly infested trees was forced into more resistant trees during the current season very little infestation occurred.

Lower Keeler Creek Unit — Acres -- 500

Infested trees per acre		.06
Percent of stand killed		.2
Infested trees on unit	30	

Control measures conducted in this unit early in 1939 reduced the infestation from an estimated .933 infested tree per acre in 1938 to .303 in 1939. The 1939 infestation was composed largely of lightly attacked trees that had been injured during control operations. The 1940 infestation is practically normal and does not present a serious problem.

This area is now up for sale and in all probability will be logged in the near future.

Upper Keeler Creek Unit — Acres 4,300

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No infestation of a serious nature has as yet been recorded in the Upper Keeler unit. This unit is comprised of several small drainages, of which Halverson Creek is the largest, and a narrow strip along Keeler Creek. The area is not heavily stocked and much of the timber is overmature and mixed with hemlock.

In as much as the area has now been sold, it is believed that it will be logged in the near future.

Benning Creek Unit — Acres -- 1,720

Infested trees per acre		.39
Percent of stand killed		1.0
Infested trees on unit	670	

During the survey of 1938 an infestation of the mountain pine beetle in the white pine stands of Benning Creek was found to have reached a point of .42 infested tree per acre. Control measures which were instituted during the spring of 1939 treated all of the infested trees in the more heavily infested central portion of the area but unfortunately did not clean out the entire drainage. A reinfestation of .236 was recorded in 1939, which has evidently increased to .38 during the present season. The current infestation is largely in the more heavily timbered central area along the creek where the control work was done in 1939.

This area is also within the sale area which includes all of the Keeler Creek drainage.

Spar Lake Unit — Acres -- 4,960

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

Although no infested trees were recorded on the sample plots examined in the Spar Lake area, a few scattered red tops were observed in the stands.

Logging has cut down the acreage to some extent, as sections 14 and 12 have been clean cut since the survey of 1938.

W. Fk. Quarts Creek Unit — Acres -- 1,400

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

Although there has been considerable kill in the white pine stands in the Quartz Creek unit in the past, no infestation was recorded during the present survey.

Seventeen Mile Unit — Acres -- 1,000

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No insect infestation was recorded in this area of thinly stocked white pine.

Bristow Creek Unit — Acres -- 1,120

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No infested trees were recorded on the sample plots examined in the area. However, a few infested trees were seen by the men surveying the area. The infestation is believed to be entirely normal at this time.

North Fork Big Creek Unit — Acres -- 640

Infested trees per acre		.05
Percent of stand killed		.5
Infested trees on unit	51	

There is only a narrow strip of timber along the creek that varies from 10 to 30 chains in width in this unit. While there are a few infested white pine along the trail, there is no evidence of an epidemic in the area.

Roberts Fork Unit — Acres -- 1,040

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No infested trees were found on the sample plots examined in this unit. However, two infested trees were seen off the strip and a few red tops from 1939 kill were occasionally noticed.

The infestation is not considered other than normal at this time. The timber is rather thinly stocked and about 180 years in age and is mixed with lodgepole pine and some spruce.

Bear Creek Unit — Acres -- 2,240

Infested trees per acre		.11
Percent of stand killed		.5
Infested trees on unit	246	

An increase of 12 percent is recorded as having occurred in the Bear Creek unit since the survey in 1938. The infested trees recorded during the present survey were found along a road where construction injury was common, and near placer mining operations where tree injury was also a factor.

Ramsey Creek Unit — Acres -- 2,560

Infested trees per acre		.034
Percent of stand killed		.1
Infested trees on unit	87	

Although the infestation figure of .034 tree per acre is believed to be representative of the infestation in the white pine stands of the Ramsey Creek drainage as a whole, there were numerous instances of infestation in injured trees along a road. In one instance 5 very heavily attacked trees were seen along a road which were not recorded in the sample plots.

Cool Creek Unit — Acres -- 1,600

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

No previous survey of the white pine stands in the head of Cool Creek have ever been made. The present survey in the area was in the nature of an investigation to determine the type of stand and to determine if it would be advisable to consider the area as a survey unit. The area is quite remote from the Yaak River road and very difficult to reach. A very light stocking of overmature timber was found which showed no infestation by the mountain pine beetle. However, Engelmann spruce in the area showed evidence of defoliation during the past season by what is believed to have been the spruce budworm.

Cyclone Crawford Unit — Acres -- 1,280

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

Two investigative strips run in this area to determine the extent of the white pine disclosed only a very few white pine trees. No further work should be done in this area.

Pine Creek Unit — Acres — 640

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

Because no survey has been made in the Pine Creek area for a number of years an investigation was made to determine the status of the area in regard to insect infestation and to determine the extent of the white pine stand.

The results of the work done in the area show there is only a strip of seed trees along the creek. The area has been logged except for a number of very old decadent trees which were left because of their low commercial value.

The mountain pine beetle has killed some of these trees in the past few years and is still somewhat active in the area. However, no infestation was recorded on the sample plots examined.

O'Brien Creek Unit — Acres — 1,400

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

Because no insect survey data have been secured from the O'Brien unit for a number of years, a few investigative plots were examined in the unit. The area has been logged and no infestation was recorded in the remaining seed stand.

Goat Creek Unit — Acres -- 640

Infested trees per acre		.034
Percent of stand killed		.03
Infested trees on unit	22	

Only a light stocking of seed trees remain in the Goat Creek drainage. There is only a normal infestation that will probably not require any further examination on future surveys.

Spread Creek Unit — Acres -- 960

Infested trees per acre		0
Percent of stand killed		0
Infested trees on unit	0	

ENGELMANN SPRUCE STANDS

Because of the rather large amount of old kill in the spruce stands of the Spread Creek drainage two short strips containing 124 sample plots were examined. No current year's kill was recorded and it is thought that the spruce infestation which spread through practically the entire spruce stand of the forest in 1937 has died out.

Pinkham Unit — Acres -- 800

Infested trees per acre		.05
Percent of stand killed		.1
Infested trees on unit	40	

The spruce stand in the head of Pinkham Creek on the Rexford ranger district suffered from a very severe infestation of the Engelmann spruce beetle in 1937 which killed over half the stand in a small area along a newly constructed road. Since that time several examinations have been made in the area and the infestation has been reported

as decreasing. In fact, there has been very little evidence of infestation following the first outbreak.

During the present survey 193 sample plots were examined in the area and one infested spruce was recorded. It is felt that the infestation has reached a normal status and that there will be no need for further examination for some time.

Pheasant Creek Unit — Acres -- 1,200

Infested trees per acre		.11
Percent of stand killed		.4
Infested trees on unit	132	

The Pheasant Creek area of the upper Yaak River was surveyed to determine insect damage to the spruce stands. While there is evidence of past kill which is thought to have occurred in 1937, there is no present infestation of any consequence. Only one infested spruce windfall was recorded on the sample plots examined in the area.

Respectfully submitted,

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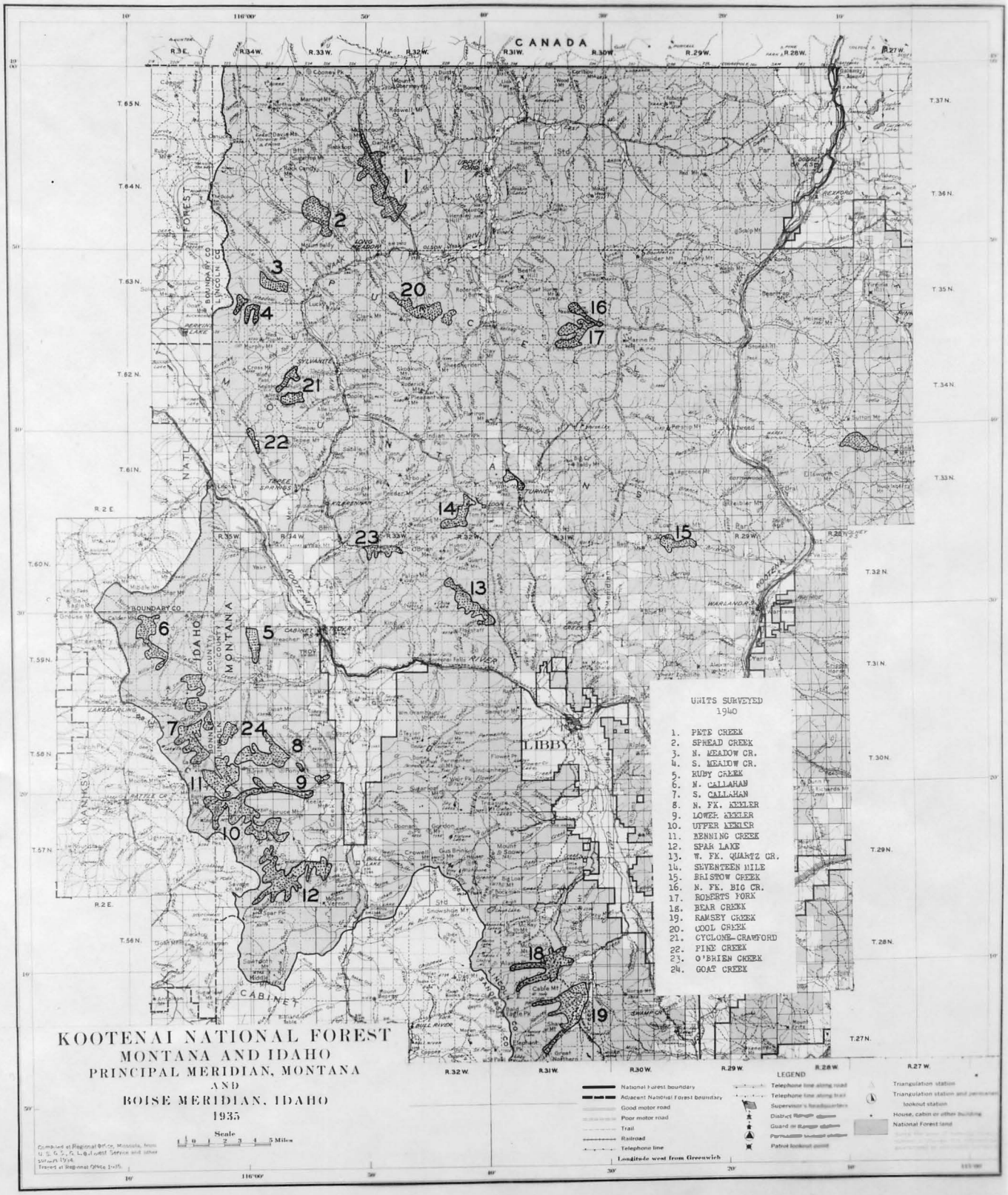

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